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## Transport Policy

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Paper

### Reducing energy use in US freight transport

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### Abstract

The movement of freight consumes about 6.2 EJ of energy annually, and accounts for about 19% of US oil consumption. Environmental concerns, notably urban air quality and global climate change, have increased attention on fossil fuel use and ways to reduce it. The freight sector has been largely overlooked, although there are numerous opportunities for reductions in energy use in this sector. Although trucks carry less than one-third of all freight (as measured by tonne-km), they account for over 80% of freight energy use and their energy use is likely to continue to grow rapidly. Options to reduce freight truck energy use include improving technical energy efficiency through improved technology and operations; and shifting freight to other, more energy efficient modes. Demonstration runs of heavy trucks combining commercially available technologies, careful driving, and optimal driving conditions have obtained impressive energy efficiencies 50–70% above that of the current fleet. If all heavy trucks achieved this level of energy efficiency, oil consumption could be reduced by about 1.0 EJ. Although real-world operating conditions would likely yield reduced energy

efficiencies, these results do suggest the potential for a considerable energy saving from greater use of commercially available technologies.

For long-haul movements, trains are often more energy efficient than trucks. However the two modes differ in many other ways as well – trucks are often faster and more flexible, while trains are often less expensive. The recent growth in intermodal movements ties the two modes together, making use of each mode's strengths. At present trains and trucks do compete in some long-haul markets, and additional savings of up to 0.2–0.5 EJ may be possible by shifting more long-haul freight from trucks to trains.

Policy options to promote reduced energy use in freight transport include energy taxes, regulations such as performance mandates and improved speed limit enforcement, changes in Federal procurement and R&D, early retirement programs, and promotion of intermodal movements. In many cases reduced energy use can reduce costs and thereby improve the freight system overall; however some policy options to reduce energy use – such as reductions in speed limits – may adversely affect other goals (in this case, speed of delivery); policy decisions must recognize these trade-offs.



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## Keywords

energy efficiency; freight; fuel consumption; load size; tax

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† This paper is drawn from a recent report (US Congress, 1994) prepared in response to a request by the US Congress for analyses of technologies and policies to increase energy efficiency.

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